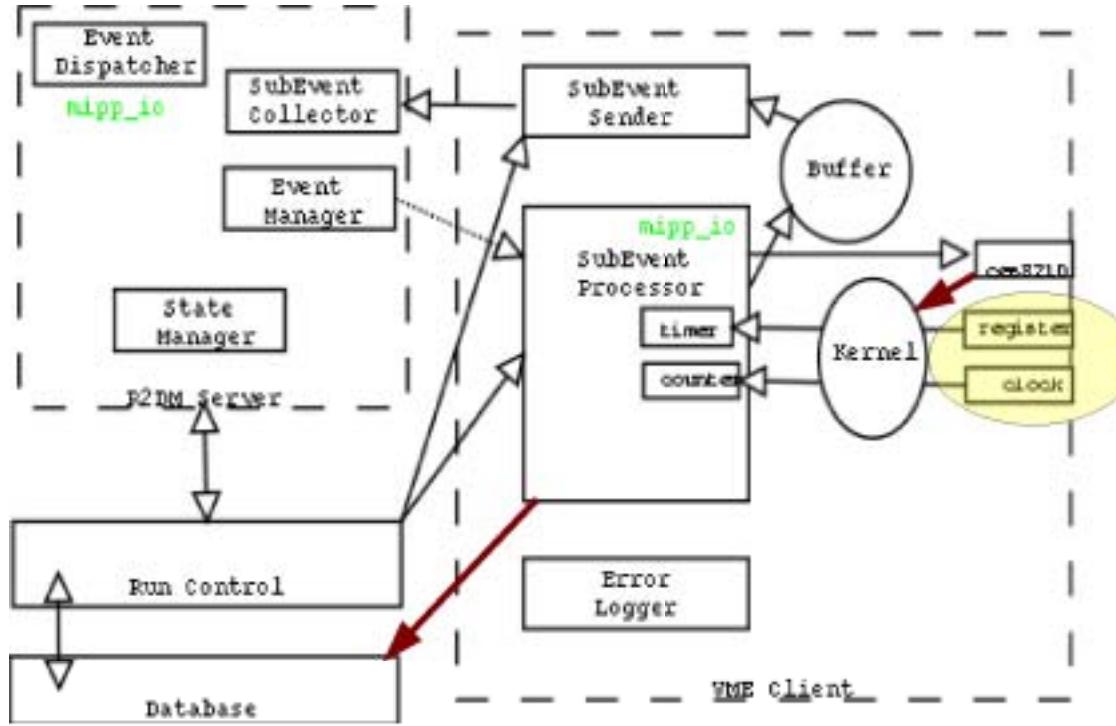
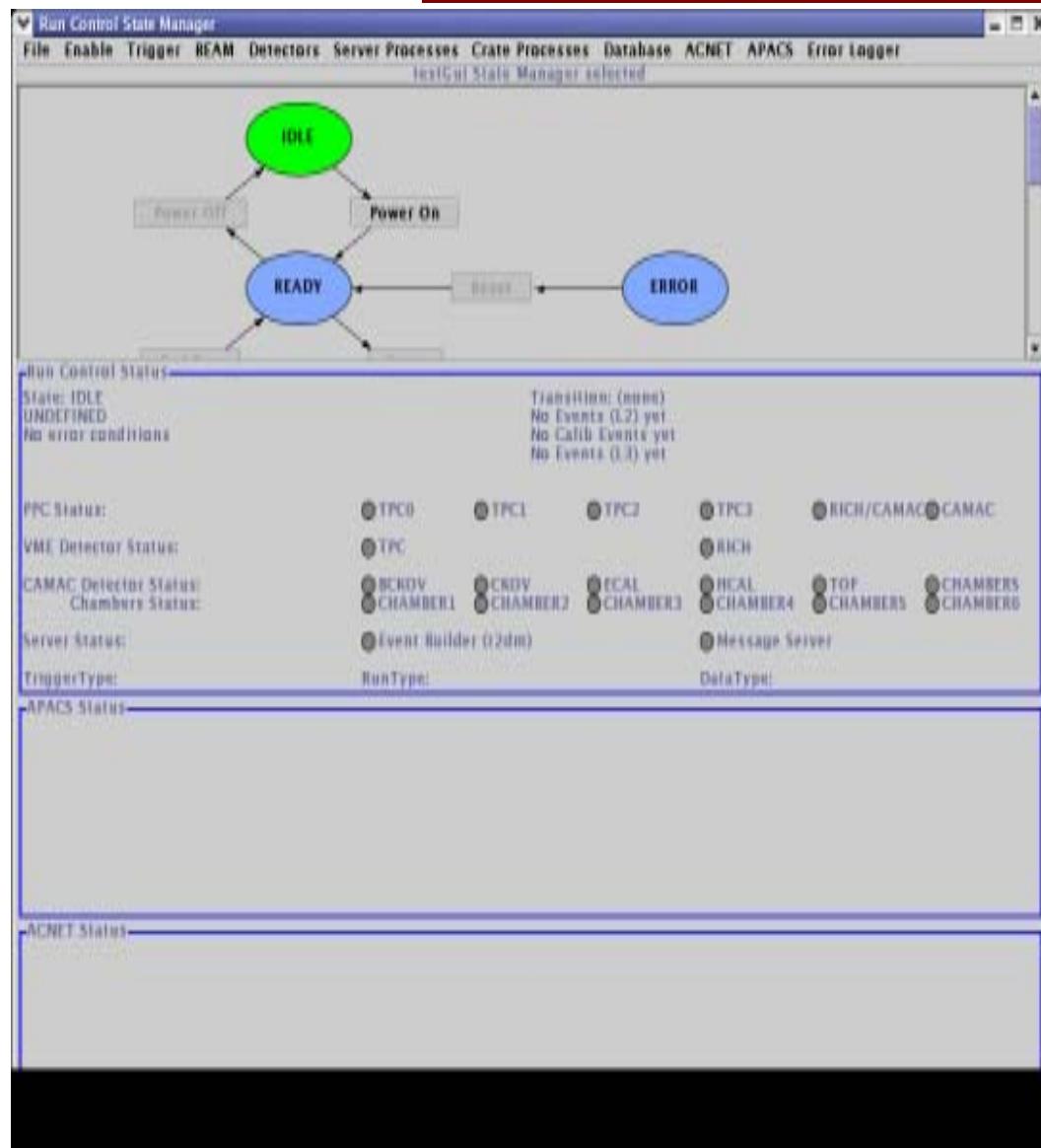


# MIPP DAQ Overview



- Run Control
- Detector Classes
- Trigger
- R2DM
- DB & Enstore
- Miscellaneous
- Plans

# Run Control



- Starting ( [e907daq@fnal](mailto:e907daq@fnal), [mhdp@llnl](mailto:mhdp@llnl) )
  - setup rc, elvin, java
  - java [ode.rc.gui.GUI](#) menuGui.xml
- Configuring (via active menus)
  - run number & type
  - detectors to read
  - trigger type
- Starting and Ending a run
  - click “start”, “end run”
- Plans
  - test with wire chambers
  - add run, trigger configuration
  - add real statistics info
  - .xml to cvs, doc to web

# Detector Classes

Here are the classes, structs:

bitbus  
Buffer  
dsp  
dspSoftware  
pedestal  
quadrant  
**RichVME**   
stfek  
tpcDataProcessor

Generated on Fri May 2 14:1

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## RichVME Class Reference

RichVME class contains functions for controlling E907 RICH electronics. [More...](#)

[#include <cvlvme.h>](#)

[List of all members](#)

### Public Methods

**RichVME (VMEAddt\_t base\_address)**  
RichVME class contains functions for controlling E907 RICH electronics.

- RichVME ()
- bool GetBoardCount (short &count)
- bool GetBoardID (short &id)
- bool GetControllerStatus (short &status)
- bool GetData (short &n\_words, short \*data)
- bool GetEnableMask (short board, int &mask)
- bool GetPipelineDelay (short board, short &delay)
- bool GetPSVoltage (short board, float &plus5, float &plus5)
- bool GetTemperature (short board, float &temperature)
- bool GetTestPulseHeight (short board, short &pulse\_height)
- bool GetThreshold (short board, short channel, short &thresh)
- bool EnableChannel (short board, short channel, bool enable=true)
- bool SetEnableMask (short board, int mask)
- bool SetBoardID (short id)
- bool SetPipelineDelay (short board, short delay)
- bool SetTestPulseHeight (short board, short pulse\_height)
- bool SetThreshold (short board, short channel, short threshold)
- bool AssignBoardAddresses ()
- bool ResetReadoutBoards ()
- bool ReadEnableMasks (bool global=false)
- bool ReadPipelineDelays (bool global=false)
- bool ReadTestPulseHeights (bool global=false)
- bool ReadThresholds (bool global=false)
- bool SendEnableMasks (bool global=false)
- bool SendPipelineDelays (bool global=false)
- bool SendTestPulseHeights (bool global=false)
- bool SendThresholds (bool global=false)
- bool SetupAllBoards ()
- bool SetTestThresholds ()
- bool SetTestPulses ()
- bool SetTestEnableMasks ()
- bool SetTestPipelineDelays ()

### • Camac (main detector)

- Detector->Subdetector->Module classes
- Set & Readout fn's
- tested

### • RICH

- numerous fn's
- tested

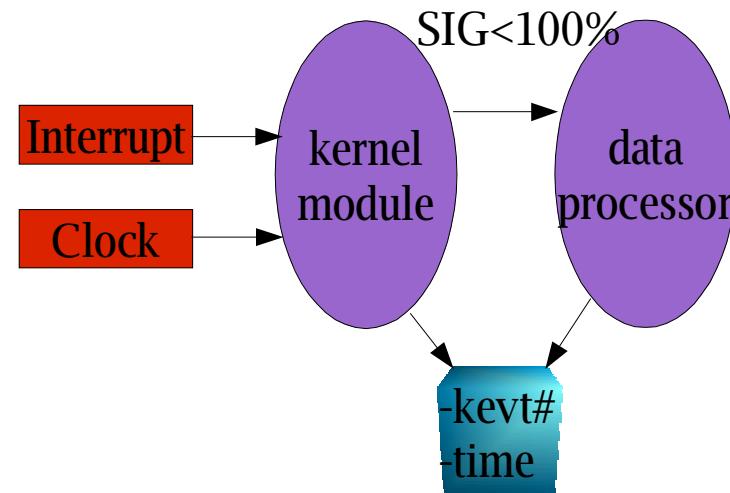
### • TPC

- complex class structure
- under development

# Trigger & Clock

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- Trigger software
  - Universe driver
  - Loadable kernel module
  - Receives ces8210 interrupts
  - Sends user signals to registered processes
- DAQ Trigger Types
  - Data
  - Pulser
  - Software signal generator (a-sync)
- Clock
  - time-stamp
  - event sync



Can be replaced with...

Jorway 41 Output Register



# R2DM

---

- E907 Event Builder
- E907Client (6)
  - one on each ppc
  - sends pre-formatted buffers to server on e907daq over sockets
- E907Server
  - assembles events by event number
- Event server capabilities...?
  - check w/ Luciano
- R2DM diagrams below

# DB & Enstore

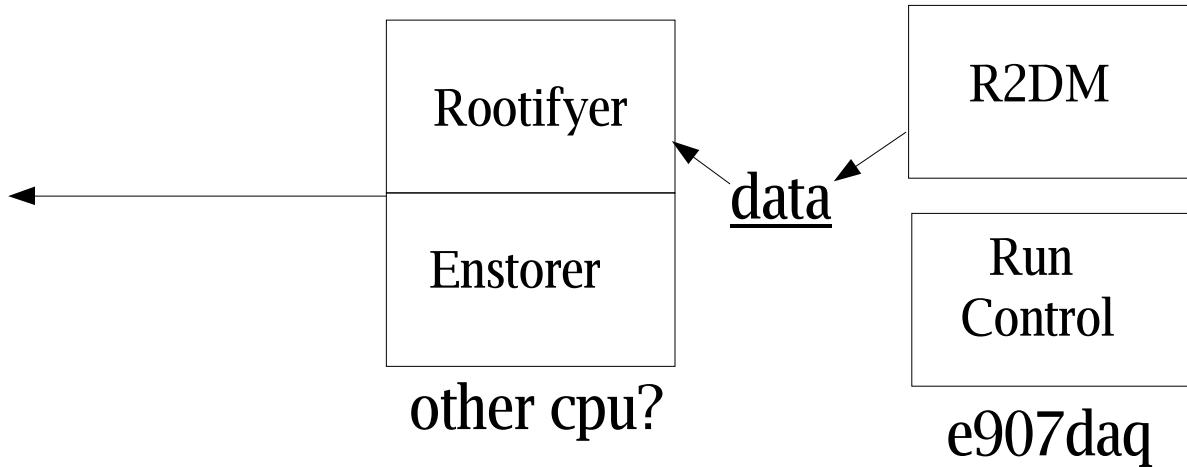
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- Database

- Using Postgresql, e907daq as server
- C++ interface exists (David Lange), not tested (rest of us)
- Java, perl, web interfaces possible

- Enstore

- Registered (me), not tested (me)
- Writing to enstore from separate process
- Possibly after root afterburner



# Plans

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- MIPP DAQ

- Test camac readout w/ wire chambers
- TPC readout
- RC empowerment
- DB usage
- clock & trigger, ring buff, errlog

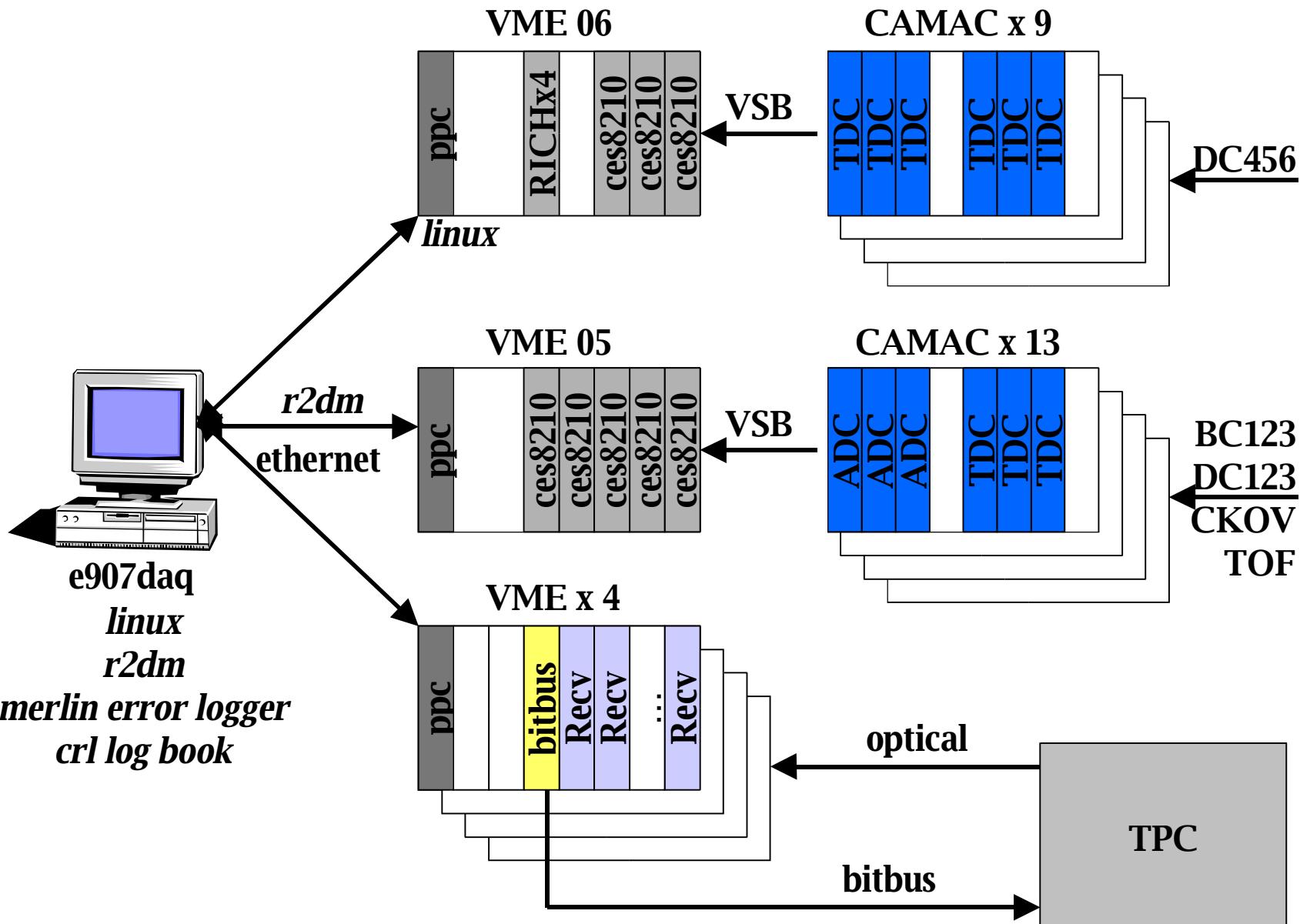
- ODE

- Continue support r2dm, run control, elvin, merlin
- Support above kits in RH upgrade

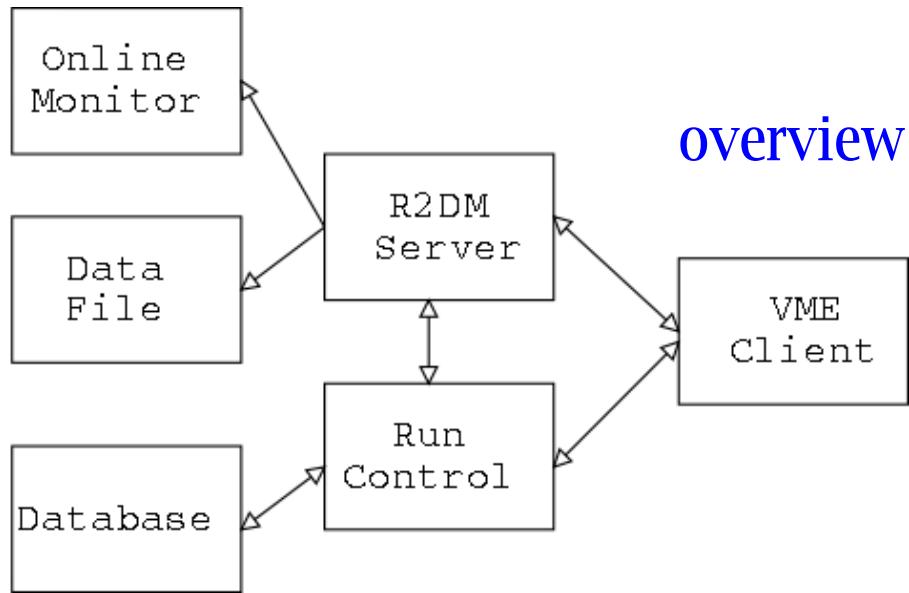
- MISC DAQ

- Move 2<sup>nd</sup> cpu to Fermilab
- Upgrade from RH 6 to **RH 7.3**
- automake builds

# DAQ Hardware



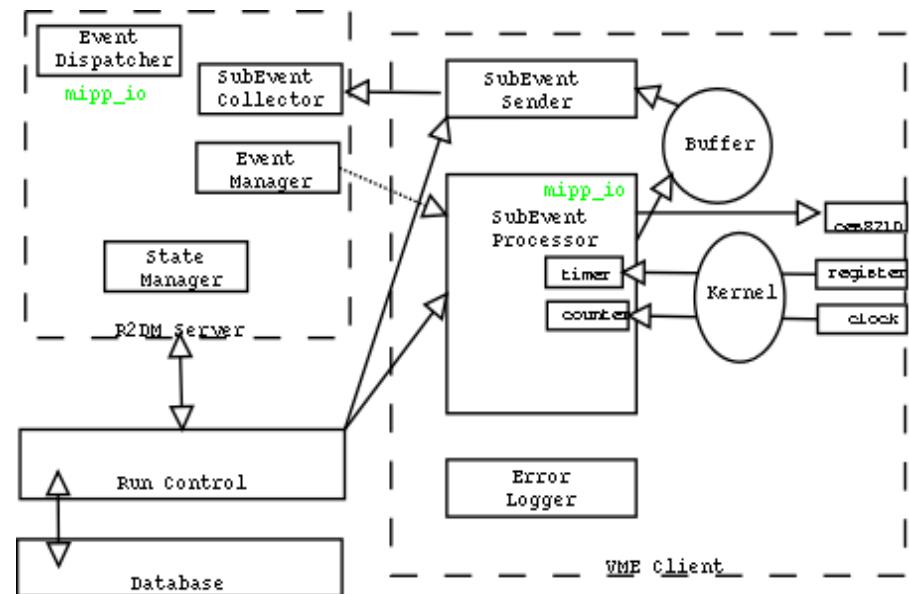
# DAQ Software



overview

&

expanded view



Simple and Modular

ODE: R2DM, RunControl

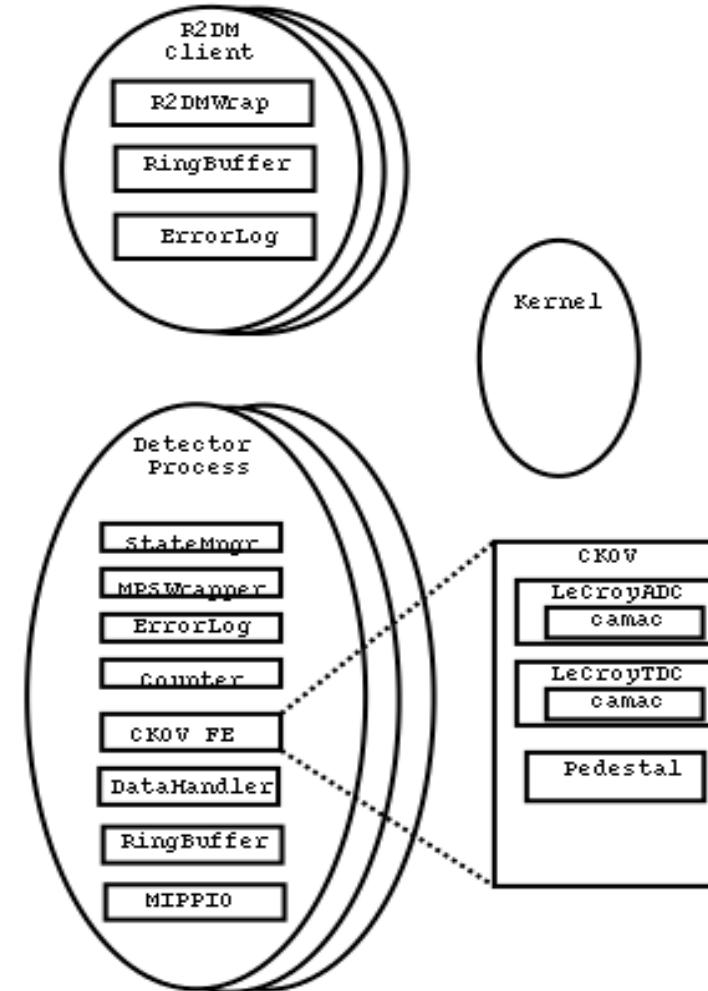
MIPP: VME Client, Database

Monitor

# DAQ Code

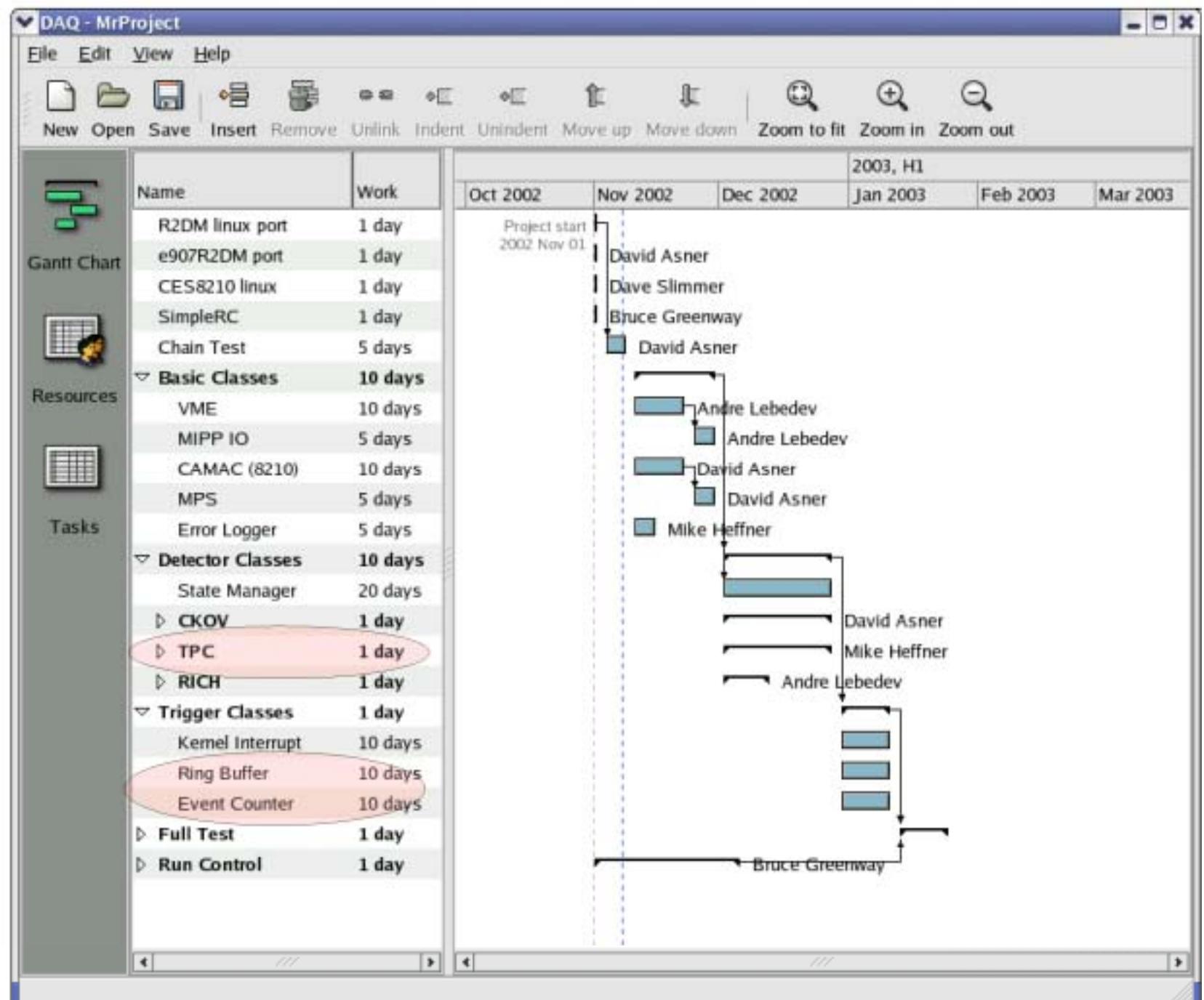
- C++ Class Layout
- Start with Base Classes
  - VME
  - ErrorLogger
  - MPS (messages)
- Move on to Detectors
  - CKOV
  - RICH
  - TPC
  - ...
- Trigger Classes...

PPC Processes and Class Diagram



One process/client per detector

# Project Plan



Mipp Collab-mtg

02Nov09